LIBRARY BOOKS MANAGEMENT SYSTEM

[1]MD.ASMA, [2]B.BALA KRISHNA, [3]B.VENKATSWAR RAO, [4]EMERALD SHARON, [5]LAXMIPRIYA

[1]Assistant Professor, CSE Department,CMR College of Engineering & Technology

[2]Assistant.Professor, EEE Department,CMR College of Engineering & Technology

[3]Assistant Professor, ECE Department,CMR College of Engineering & Technology

[4-5]B-TECH,Dept.of CYBER SECURITY, CMR COLLEGE OF ENGINEERING & TECHNOLOGY

Abstract

Libraries are facing maintenance and upkeep problems from time immemorial. In the modern age, libraries are suffering from many problems including a lack of space, ineffective staff, and improper management. Without a proper system in place, most libraries portray a quite haphazard picture to the readers. It is a pains taking and meticulous affair to maintain and preserve records and materials. In this cut-throat competitive world, the education system presents far more challenges and demands than ever before. In such a dynamic and volatile environment, the libraries, especially college and university libraries must learn to cater to such ever-changing demands. Therefore, keeping in sync with the technological evolution around it, it is time for libraries to reduce its dependency on manual work and make avail of computers and sophisticated technology for its management and services. College libraries across India are still dependent on traditional manual methods of information procurement and storage, with little to no use of electronic software. The ordering slips and card catalogue systems are still in vogue. Most of the users are also not aware of the concept of library automation and that their college libraries can be totally computerized for better management and operation.To overcome this problem, we have designed a machine to separate and collect the books of same category/subject. This machine consists of a scanner that is used to scan the barcode/QR Code on the book, then it detects the category to which the book belongs (it is pre-recorded in the database) . After the detection, the book moves in respective direction of its category and falls into its place.

1. INTRODUCTION

Libraries are facing maintenance and upkeep problems from time immemorial. In the modern age, libraries are suffering from many problems including a lack of space, ineffective staff, and improper management. Without a proper system in place, most libraries portray a quite

haphazard picture to the readers. It is a pains taking and meticulous affair to maintain and preserve records and materials.College libraries across India are still dependent on traditional manual methods of information procurement and storage, with little to no use of electronic software. The ordering slips and card catalogue systems are still in vogue. Most of the users are also not aware of the concept of library automation and that their college libraries can be totally computerized for better management and operation.Segregation of books into different categories requires man power and also is time consuming. And as the technology has developed and achieves glorious heights, we must make use of it in every positive way possible. As of the library management systems, there have been a lot of innovations done to improve the way of managing books and records of the library. But not all libraries can put in huge amount of funds on large machinery which differs in each library as it depends on its architecture and space available. The solution for this can be a simple machinery that can be used by, both large libraries and small libraries. Here, the space factor is not the main priority. Hence, all libraries; big, small, spacious, funded, non-

funded can afford this and easily implement it in their working space.

2. RELATED WORK

The gaps in existing solutions are that not all libraries can afford the big machinery, i.e. high cost. Also it requires large amount space. It changes based on the architecture of each library.

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using the advanced methods of technology, libraries should be updated for the better and efficient working.

3. IMPLEMENTATION

Even though we have advanced technology and methods, most libraries do not prefer adapting to it in India. This is mostly because of the complex nature of machines which is hard to understand by most of the people. And also, the primary concern is the space occupied by these machines itself. Most of the libraries are small and non-funded, it is hard for these type of libraries to adapt to large, expensive machines for its management.So, we have come up with a solution that includes machinery of different sizes that can be selected accordingly by the libraries according to its specifications and space requirements.The main objective is to update most of the libraries using advanced and affordable technology. To meet the requirements of the small town libraries as in the factors space, cost and complexity. To increase the efficiency of librarians and create a hassle free environment at the counters of the libraries. By creating machinery and software that is easy to understand and use, occupies less space or occupies space according to the library's requirements.

The main motive is to make work more efficient, easy and less time taking. College libraries across India are still dependent on traditional manual methods of information procurement and storage, with little to no use of electronic software. The ordering slips and card catalogue systems are still in vogue. Most of the users are also not aware of the concept of library automation and that their college libraries can be totally computerized for better management and operation.This hinders the development of libraries and also not making use of technology in an efficient way. Hence using the advanced methods of technology, libraries should be updated for the better and efficient working.Even though we have advanced technology and methods, most libraries do not prefer adapting to it in India. This is mostly because of the complex nature of machines which is hard to understand by most of the people. And also, the primary concern is the space occupied by these machines itself. Most of the libraries are small and non-funded, it is hard for these type of libraries to adapt to large, expensive machines for its management.So, we have come up with a solution that includes machinery of different sizes that can be selected accordingly by the libraries according to

its specifications and space requirements.In this project, we made an attempt to get things done in an easier way and create a hassle free atmosphere around the library counter. This is the way to new smart offline libraries.In our project, we have created a machine that works based on the components i.e. One 10rpm motors, a conveyor belt, one esp32 cam, 1293D IC + module, Adapter of 12V/1Amp,Arduino Uno, buzzer, LCD(16x2) . For the machine to work, code has been written using C++. So the working is as follows: Firstly, the book has to be scanned using scanner. Then the book is kept on the conveyor belt. After going through the database the machine identifies the category to which the book belongs. The book is then pushed in the respective direction of the category to which it belongs.

4. EXPERIMENTAL RESULTS

In this project, we made an attempt to get things done in an easier way and create a hassle free atmosphere around the library counter. This is the way to new smart offline libraries.In our project, we have created a machine that works based on the components i.e. One 10rpm motors, a conveyor belt, one esp32 cam, 1293D IC + module, Adapter of 12V/1Amp,Arduino Uno, buzzer, LCD(16x2) . For the machine to work, code has been written using C++.

So the working is as follows: Firstly, the book has to be scanned using scanner. Then the book is kept on the conveyor belt. After going through the database the machine identifies the category to which the book belongs. The book is then pushed in the respective direction of the category box to which it belongs.

1. First the conveyor belt has to be connected to the driver circuit- L293D.

2. Two phones are required. One for the hotspot connection with the driver circuit, and the other is used to get the IP address of the driver circuit using an application, and for getting the interface of the esp32 cam using the browser.

3. Now the QR Code is scanned and the message of the category of book is displayed on the LCD.

4. After the audrino receives the message, it activates the conveyor belt in the respective direction.

5. The book falls in the respective category box.

Finally, we have come up with a solution that our project scans the QR/BARCODE on books and they will be reached to their respective shelves according to their categories. We have successfully completed this project, which will actually be helpful and has scope in the market. The main aim of this project was to

improve the library management system by segregating the books according to its category without using man power, and it was achieved. This also decreases the crowd near the library counter, making the atmosphere hassle free and makes the work even easier.
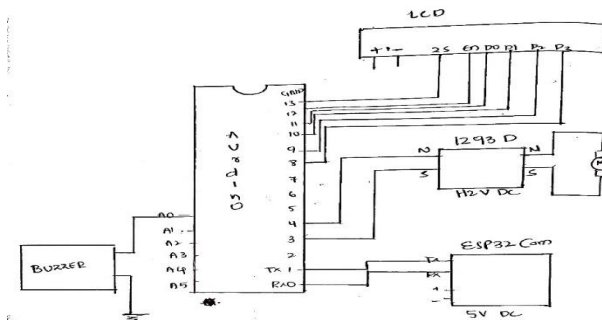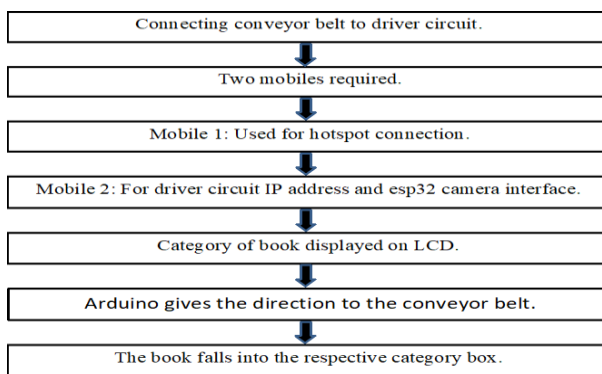
5. CONCLUSION

We have successfully completed this project, which will actually be helpful and

has scope in the market. The main aim of this project was to improve the library management system by segregating the books according to its category without using man power, and it was achieved.

1. Digitalization of Library, but with a tinge of beautiful offline experience.

2. Man power can be reduced.

3. Efficient management of time as well.

4. Reasonable cost.

5. Easy to understand.

6. REFERENCE

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